

EXHIBIT 39

Google Nest Mini (2nd generation) Teardown

Written By: notethan (and 2 other contributors)

Published: February 18, 2020



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Tools Featured in this Teardown

Torx T6 driver

Not for sale


View

This teardown is **not** a repair guide. To repair your Google Nest Mini (2nd generation), use our [service manual](#).

Step 1 Unfasten the back cover




- Begin with your standard issue Nest Mini. note the white insert inside the mounting hole.
- Insert an appropriate tool underneath this flexible rubber white insert. I'm using a knife. Knives are sharp, be careful.
- The rubber insert comes out, revealing a sneaky T6 Torx screw.

 [One comment](#)

Step 2 Remove the back cover




- Do the normal thing with the T6 Torx screw.
- Grab the front of the speaker in one hand and the back cover in the other, and rotate the back cover clockwise slightly. It should rotate just a few millimeters.
- Four lugs inside are disengaged when it rotates. You can now gently lift the back cover away. Be careful not to put strain on the ribbon cable.
- Using a plastic spudger, unfasten the zero insertion force (ZIF) connector latch. Slide the ribbon connector out of the ZIF connector to free it.

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Step 3 Power input, mic switch



- Three more T6s secure a board bringing power input and a microphone switch down the ribbon cable.

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Step 4 Remove the speaker



- Four more T6 screws secure the speaker assembly to the front.
- A small connector must be unplugged to detach the speaker after unscrewing. Under the speaker, we find ... more T6 screws!
- The speaker has no fasteners and probably cannot be opened further nondestructively.
- The foam covering the speaker hides a serial number in QR and written form.

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Step 5 Another piece of plastic




- So far all the T6 screws have been the same. The five screws securing this piece, which covers the logic board, are not. Four long ones and a short one. If you forget the positions, the picture has your back.

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Step 6 Deeper




- Relieved of its T6s, the last piece pulls away with a bit of thermal shmoo.
- Here lies the smarts of this speaker. Ain't that much to look at, is it?

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Step 7 Naked



- The board can be gently prised from its casing, now secured only by some glue, thermal pads, and foil tape.
- There's not much in here that's serviceable without an advanced degree in fiddly soldering.

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**notethan**

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265 Reputation

1 Guide authored

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20 COMMENTS

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Hello notethan, good teardown, is some marking readable on the flash and cpu chips?

[Leonid Protasov](#) - 02/21/20

Thanks Leonid.

The NAND flash is TC58NVG2S0H

The SoC is Synaptics AS-370 A1

RAM is NT5CC128M16JR

The entire markings on each chip are:

—

1932KLE

ZN4238 CHINA

TC58NVG2S0H

8A16

—

Synaptics

AS-370 A1

933AFFH 423

U15014.000F

—

NT5CC128M16JR-EK[there's more letters but they're covered]

92420800EP L T[there's more letters but they're covered]

[notethan](#) - 02/22/20

What power it has inside so I can make it portable with a rechargeable battery?

[ALEXA](#) - 05/05/20

Hello. The power brick gives out 14V 1.1A. You can buy USB-C Power Delivery module and program it to give out 15v (ranges from 14 - 16v, depending on your power supply). My highly guess is that the logic inside has it own downconverter to its desired voltage, but the driver for the speaker takes whatever comes in directly, and my guess they can handle a wide range of voltage.

[Tord Are Karlsen](#) - 11/25/20[@hk_asking](#) The switch is on a small peripheral board connected by a ribbon cable. I cannot tell if it directly disconnects the microphone.[notethan](#) - 05/05/20 Load more comments**Add Comment**

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